

# **\*\*ATTENTION\*\***

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# APPLICATION FOR CERTIFICATION

Washington Department of Wildlife



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## BACKYARD WILDLIFE SANCTUARY PROGRAM

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ County \_\_\_\_\_ Zip Code \_\_\_\_\_

Mailing address (if different) \_\_\_\_\_

Telephone (\_\_\_\_)-\_\_\_\_\_ Property size (dimensions or acres) \_\_\_\_\_

Number of years you have lived at this address \_\_\_\_\_

### 1. FOOD

List the plants on your property that may provide seeds, fruits, nuts, or nectar that are eaten by wildlife. Note: If your property is large or heavily wooded you may want to summarize the kinds and numbers of plants to the best of your ability.

<u>Trees</u>	<u>No.</u>	<u>Shrubs</u>	<u>No.</u>	<u>Annuals and Perennials</u>	<u>No.</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
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_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

List any supplemental foods, types and numbers of feeders that you provide for wildlife, and the seasons of the year that these are provided.

<u>Food (seeds, suet, etc.)</u>	<u>Feeder Type</u>	<u>No.</u>	<u>Season Provided</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(over please)

## 2. WATER

Check the seasons of the year during which you provide water to wildlife for drinking and/or bathing:

☐ All Year    ☐ Winter    ☐ Spring    ☐ Summer    ☐ Autumn    ☐ None

Check the ways in which you provide water for wildlife:

☐ Bird Bath    ☐ Pond    ☐ Stream    ☐ Other: \_\_\_\_\_

## 3. SHELTER

Indicate the places on your property where wildlife can hide, lay eggs, or raise young (check appropriate boxes):

<input type="checkbox"/> Trees	<input type="checkbox"/>	<input type="checkbox"/> Dense Shrubs	<input type="checkbox"/>
<input type="checkbox"/> Dead Trees	<input type="checkbox"/>	<input type="checkbox"/> Brush Piles	<input type="checkbox"/>
<input type="checkbox"/> Partially Dead Trees	<input type="checkbox"/>	<input type="checkbox"/> Rock Piles/Wall	<input type="checkbox"/>
<input type="checkbox"/> Nest Box or Shelf	<input type="checkbox"/>	<input type="checkbox"/> Pond or Stream	<input type="checkbox"/>

We would appreciate any additional information that you would like to provide about your backyard wildlife sanctuary. You may want to include the number of years that you have provided some needs of wildlife, changes that you have observed in the numbers and kinds of animals around your property, or some of your most memorable experiences with them. If you wish, you may include a sketch or some pictures of your wildlife habitat. Please write this information on a separate sheet of paper and attach it to this application. We cannot return these materials, so be sure that you have duplicates for your own use.

Your name(s) as you would like to have it on your Backyard Wildlife Sanctuary certificate:

(Please print) \_\_\_\_\_  
\_\_\_\_\_

Return this completed form to:

Backyard Wildlife Sanctuary Program  
Washington Department of Wildlife  
North 8702 Division  
Spokane, WA 99218

# HUMMINGBIRDS OF EASTERN WASHINGTON

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Hummingbirds are a favorite of many people. Their small size, bright colors, and amazing flight make them unique among birds. Did you know?

- hummingbird wing-beats may reach 200 per second, propelling the bird up to 50 mph.
- not only can hummingbirds hover, they can also fly backwards or upside down.
- if a person had a tongue proportionately as long as that of a hummingbird, he could lick an ice cream cone 12 feet away without moving his head.
- if a 150 lb. person had the metabolism of a hummingbird, he would eat 300 lbs. of food daily, have a body temperature of 750° F., and burn 155,000 calories/day.
- excited hummingbirds may have 1200 heart beats/minute and breathe 273 times/minute.

The most common hummingbirds in eastern Washington are the rufous and calliope hummingbirds, found here during the spring and summer months. The black-chinned hummingbird is uncommon, and the Anna's hummingbird is considered rare.

Hummingbirds make a cup nest, usually placed 20 feet or lower in the branches of a tree or shrub. Only two eggs are laid, each of which is less than one-half inch in length. Hummingbirds consume nectar from flowers, but they also eat insects and are considered omnivorous. The nectar in their diets may be substituted with a sugar solution in a special hummingbird feeder. This is one way for a homeowner without nectar-producing plants to attract and enjoy these birds.

## ARTIFICIAL FEEDER SUGGESTIONS:

Find a place for the feeder where it may be observed from inside your home or near sitting areas in your garden. Also make sure it is in a location that can be easily reached so that cleaning and refilling will not pose a problem. Plant nectar-producing plants (see list) in the vicinity of the feeder so the birds will use the insects and nectar associated with them for more balanced nutrition.

Some retail commercial outlets offer a formula complete with vitamins and minerals. If you wish to make your own solutions, start with 1 part of white granulated sugar in 2 parts of water; boil the solution for several minutes (to retard mold growth and fermentation) and store unused portions in the refrigerator. After the birds have found the feeder and appear to be using it regularly, reduce the sugar concentration to about 1 part sugar to 4 parts of water. This will prevent toxic effects of too much sugar on the bird's liver. Do not use honey in the feeder because a fungal disease associated with honey may result in the deaths of birds using the formula. Never use artificial sweeteners in a hummingbird feeder. The birds may starve to death in a very short time if they are fooled by non-caloric sweeteners.

Hummingbirds are attracted to bright red and orange colors. The artificial feeder should be painted or wrapped with red material to make it more easily found. Artificial food coloring should not be used.

Care of the feeder should include regular cleaning, especially when refilling. Thorough washing with hot water and a brush are needed to prevent the side effects of mold on the birds. The feeder should always contain solution or the birds will quickly move to other, more profitable areas.



### PLANTS TO ATTRACT HUMMINGBIRDS

## TREES

Horsechestnut	<u>Aesculus hippocastanum</u>
Black Locust	<u>Robinia pseudoacacia</u>
Flowering Crabs	<u>Malus spp.</u>
Hawthorns	<u>Crataegus spp.</u>
Red horsechestnut	<u>Aesculus carnea</u>

## SHAUBS

Azaleas	<u>Rhododendron spp.</u>
Beauty bush	<u>Kolkwitzia amabilis</u>
Butterfly bush	<u>Buddleia davidii</u>
Coralberry	<u>Symphoricarpos orbiculatus</u>
Elderberry, red	<u>Sambucus callicarpa</u>
Flowering currant	<u>Ribes odoratum</u>
Tatarian honeysuckle	<u>Lonicera tatarica</u>
Flowering quince	<u>Chaenomeles japonica</u>
Rose of Sharon	<u>Hibiscus syriacus</u>
Siberian pea shrub	<u>Caragana arborescens</u>
Weigela	<u>Weigela florida</u>

**VINES**

Honeysuckle, trumpet	<u>Lonicera sempervirens</u>
Morning glory	<u>Ipomoea coccinea</u>
Trumpet creeper	<u>Campsis radicans</u>

**FLOWERS**

Bee balm	<u>Monarda didyma</u>
Bleeding heart	<u>Dicentra spectabilis</u>
Butterfly weed	<u>Asclepias tuberosa</u>
Cardinal flower	<u>Lobelia cardinalis</u>
Carpet bugle	<u>Ajuga reptans</u>
Columbines	<u>Aquilegia spp.</u>
Coralbells	<u>Heuchera sanguinea</u>
Dahlia	<u>Dahlia merckii</u>
Four-o'clock	<u>Mirabilis jalapa</u>
Foxglove	<u>Digitalis purpurea</u>
Gladiol	<u>Gladiolus spp.</u>
Hollyhock	<u>Althaea rosea</u>
Jewelweed	<u>Impatiens capensis</u>
Lupine	<u>Lupinus spp.</u>
Nasturtiums	<u>Tropaeolum majus</u>
Penstemons	<u>Penstemon spp.</u>
Petunias	<u>Petunia spp.</u>
Phlox	<u>Phlox spp.</u>
Sage	<u>Salvia officinalis</u>
Sage, scarlet	<u>Salvia splendens</u>
Snapdragon	<u>Antirrhinum majus</u>
Spider flower	<u>Cleome spinosa</u>
Sweet William	<u>Dianthus barbatus</u>
Zinnias	<u>Zinnia spp.</u>

**Months in Bloom**

Mar Apr May Jun Jul Aug Sep Oct

	X X X X X	X X X X X					
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Mar Apr May Jun Jul Aug Sep Oct

	X					
		X	X			
				X	X	X
		X	X	X		
		X	X	X		
		X	X			
				X	X	
		X	X			

Mar Apr May Jun Jul Aug Sep Oct

			X X X	X X X	X X X	X X	X X
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Mar Apr May Jun Jul Aug Sep Oct[illegible]

# GARDENING TO ATTRACT BUTTERFLIES

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## NECTAR SOURCES

### Cultivated Plants

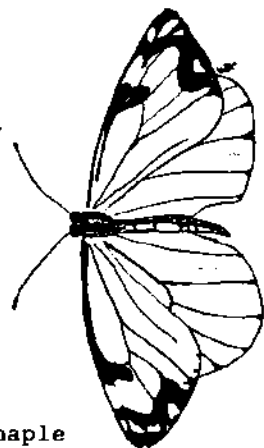
Alfalfa  
Alyssum  
Calendula  
Clovers  
Delphinium  
Marigold  
Michaelmas daisy  
Onion  
Petunia  
Pincushion flower  
Radish  
Statice  
Sweet rocket  
Zinnia

### Wildflowers

Arnica  
Aster  
Bee plant  
Dogbane  
Fleabane  
Gaillardia  
Goldenrod  
Onion  
Pearly everlasting  
Plains thistle  
Ragwort  
Stonecrop  
Western wallflower  
Yarrow

### Shrubs and Trees

Apple  
Butterfly bush  
Cherry  
Honeysuckle  
Lilac  
Ninebark  
Mock orange  
Mountain spray  
Rabbitbrush  
Verbena  
Willows



### BUTTERFLY LARVAE

Western tiger swallowtail  
Anise swallowtail  
White pine butterfly  
Cabbage butterfly (considered a pest)  
Common sulfur  
Orangetip  
Silvery blue  
Spring azure  
Lorquin's admiral  
Painted lady  
Western painted lady  
California tortoiseshell  
Milbert's tortoiseshell  
Mourning cloak  
Satyr anglewing  
Zephyr anglewing  
Mylitta crescent spot  
Silverspots  
Monarch  
Ochre ringlet  
Wood nymphs  
Woodland skipper  
Juba skipper  
Silver-spotted skipper

### FOOD PLANTS

Chokecherry, cottonwood, elm, maple  
Biscuitroot (Lomatium), cowparsnip  
Ponderosa pine, Douglas fir  
Cabbage  
Clovers, other legumes  
Rock cress, other crucifers  
Legumes  
Dogwood, Ceanothus  
Willow, apple, cottonwood, poplar, spirea  
Bull thistle, hollyhock, nettle, sunflower  
Hollyhock, nettle, pearly everlasting  
Ceanothus  
Nettle, aster, willow  
Quaking aspen, willow, elm  
Hop vine  
Currant, Gooseberry  
Thistles  
Violets  
Milkweeds  
Grasses  
Grasses  
Grasses (probably)  
Grasses  
Black locust, other legumes

### MOTH LARVAE

Polyphemus  
White-lined morning sphinx

### FOOD PLANTS

Birch, Maple, Dogwood  
Clarkia, Willow herb

## SOME WAYS TO ATTRACT BUTTERFLIES TO YOUR YARD

- \* Plant nectar-producing flowers
- \* Plant shrubs for protection and nectar production
- \* Plant larval food plants and do not spray them with insecticides
- \* Allow sunny spaces in the yard
- \* Provide wet mud, this attracts some species of butterflies
- \* Rotting meat, rotting fruit, tree sap, and animal dung attract some species

## SUGGESTIONS FOR FURTHER READING AND REFERENCES

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- Neill, William A., and Douglas J. Hepburn, Butterflies Afield (Seattle Audubon Society, 1974).
- Pyle, Robert Michael, Watching Washington Butterflies (Seattle Audubon Society, 1974).
- Pyle, Robert Michael, The Audubon Society Field Guide to North American Butterflies (New York: Alfred A. Knopf, Inc., 1981).

# BIRDS OF EASTERN WASHINGTON URBAN AREAS

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The following list contains those birds that are likely to be observed in urban residential areas and surrounding neighborhoods of eastern Washington at some time during the year. This list does not include species that would only rarely be observed, except for species of special interest.

COMMON NAME	URBAN STATUS	NATURAL HISTORY NOTES
Sharp-shinned Hawk	Occasional	Occasionally present in urban areas, especially during the winter months when it feeds on small birds. Is called a "bushwacker" because of its method of beating the shrubbery with its wings to get at its prey.
Red-tailed Hawk	Uncommon	Sometimes seen soaring over open spaces in search of small mammals. Migrates south in the winter.
American Kestrel	Common	Nests in holes in old buildings and in the cavities of trees along rivers. Year round resident and the raptor most likely to be seen in urban areas. Also called a sparrow hawk.
Osprey	Local in Occurrence	Fish eaters that nest along rivers. A summer resident often confused with bald eagles.
Bald Eagle	Rare	May be seen near rivers or lakes feeding on ducks or fish. Classified as an endangered species in most other states and threatened in the state of Washington.
Merlin	Uncommon	Present in urban areas in the winter, boldly feeding on small birds.
Valley Quail	Common	Sometimes called California quail. Found in wooded areas with some dense, low lying shrubbery nearby. Seed eaters. Eggs are placed in depressions on the ground under brush or beside a protected rock or log. Introduced to eastern Washington at various times after the turn of the century.
Ring-necked Pheasant	Local in Occurrence	Suburban areas. Requires cereal grains in winter months, insects in the spring. Introduced in 1881 to the Willamette Valley, Oregon from China.
Killdeer	Local in Occurrence	Will nest in parking lots. Seen in fields, parks, and playgrounds in the spring and summer.
Great Blue Heron	Uncommon	Can be found standing and feeding in shallow water. They are colonial nesters, building platform nests in trees. Classified as a species of special concern in Washington State. Primarily a summer resident.
Ring-billed Gull	Common	Have increased in numbers through the years. Drawn to landfills, fields, and parks in large numbers.





Pock Dove	Common	Common in residential areas where the architectural style includes covered eaves, which it uses for shelter and nesting. Also common in commercial areas. Feeds on seeds and refuse on the ground.
Mourning Dove	Common	Nests in dense shrubbery more than once during the summer. Can be seen from spring to early fall, especially if water is provided.
Western Screech Owl	Occasional	Nocturnal. Seldom seen but sometimes heard. Nests in tree cavities or in nest boxes.
Great Horned Owl	Common	Nocturnal. Nests in previously used nests. This large owl will prey on small mammals and small to medium-sized birds.
Common Nighthawk	Common	Normally seen at dusk feeding on flying insects. May nest on the roofs of some downtown buildings.
Black-chinned Hummingbird	Uncommon	Sometimes seen in suburban areas in the summer.
Rufous Hummingbird	Common	Feeds on nectar and insects. May be attracted to hummingbird feeders.
Calliope Hummingbird	Common	Nest is a cup placed low in conifers and vines.
Downy Woodpecker	Uncommon	Found in areas with numerous trees. Nests in tree cavities, usually 25 feet high. Feeds primarily on insects.
Northern Flicker	Common	Nests in tree cavities and sometimes in nest boxes. Most common in areas with tall trees. Insectivore primarily. Feeds on the ground more than any of the other woodpeckers.
Western Wood Pewee	Common	Summer resident, mostly in open pine forests. Is seldom seen because of its small size and secretive habits. Usually identified by its distinctive song. Eats insects.
Western Flycatcher	Uncommon	Lives in coniferous, rocky areas.
Western Kingbird	Uncommon	An open country bird found more often in agricultural areas. Has been known to nest between an electric transformer and a power pole.
Violet-green Swallow	Common	Nests in old woodpecker holes, cavities under eaves, and nest boxes. Feeds on flying insects.
Cliff Swallow	Common	Common in residential areas. Eats insects.
Barn Swallow	Common	Nests in barns or vacant buildings. Eats insects.
Tree Swallow	Common	Pesides eating flying insects readily takes to nest boxes.
American Crow	Common	Nest is a large basket of twigs 30+ feet high in trees. Predator on eggs and young of other birds.



Common Raven	Local in Occurrence	Most common in agricultural open areas.
Black-capped Chickadee	Common	Nests in cavities or will use nest boxes. Feeds on insects during the summer and adds fruits and seeds during the winter. Will "sound" bark like a woodpecker and eat insect eggs. Especially fond of sunflower seeds and suet.
Mountain Chickadee	Local in Occurrence	Coniferous forest. Like the black-capped, is especially beneficial because of its insect egg-eating habits.
Red-breasted Nuthatch	Common	Found in upland forested areas. Eats insects and insect eggs.
Pygmy Nuthatch	Rare	Pine forest.
House Wren	Common	Will take readily to nest boxes. Males build "extra" nests exclusively of twigs. The female decides in which one she will nest. Found mostly in areas with wild rose.
Golden-crowned Kinglet	Uncommon	Nest is a cup on the limb of a conifer, especially spruce, up to 60 feet high. Eats insects.
Ruby-crowned Kinglet	Uncommon	Summer resident. Nests locally. Coniferous forest. Eats insects and their eggs.
Swainson's Thrush	Common	Found in areas near undeveloped woodlots. Nest is a bulky cup in a shrub or small tree below 20 feet.
Hermit Thrush	Uncommon	Feeds on a variety of insect eggs, insects, fruits, and seeds. Forages on the ground.
American Robin	Common	Common in all areas, especially in areas with abundant vegetation during the breeding season. Nest is a cup in a shrub, tree, or on a ledge. They eat a variety of insects and fruits. A widely recognized and favorite bird of many urban residents.
Varied Thrush	Uncommon	Sometimes called the "Alaska robin." Eats fruits and seeds. Seen only in winter.
Bohemian Waxwing	Abundant	Is a winter visitor feeding in large flocks in residential areas. Mountain ash and hawthorn fruits attract them.
Cedar Waxwing	Uncommon	Nest is a woven cup on a tree limb 6-20 feet off the ground. Diet is largely fruits and seeds. Is a secretive summer resident seen along rivers. Especially likes Chinese elm.
Northern Shrike	Occasional	A predatory bird which is a winter visitor.
European Starling	Much too Common	Introduced to the U.S. in 1890, reached the Pacific Northwest around 1950. Nests in existing cavities. Often displaces other native species.

# PLANTS FOR WILDLIFE IN EASTERN WASHINGTON URBAN AREAS

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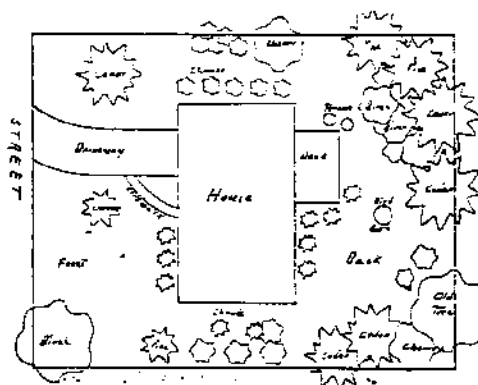
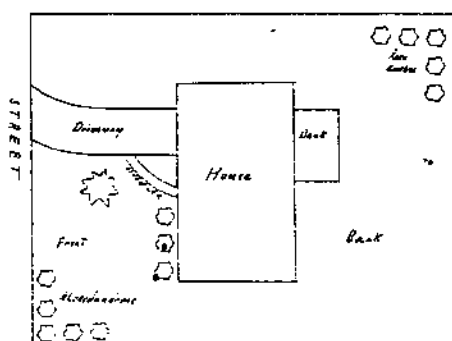
wildlife and people

now and in the

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Wildlife habitat is composed of food, shelter, water, and space. The single most important thing a homeowner can do for wildlife is to plant a variety of trees and shrubs in their yard. Plants may supply food for some animals and shelter for many others. They also supply the needed space in which reproduction and the raising of young can occur in safety. Other efforts to attract and provide for wildlife take the form of offering supplemental feed and providing nest boxes. These are, however, only a substitute for what a well designed landscape with plenty of vegetation will provide.

To achieve a beautiful yard for wildlife, many things must be taken into consideration. Plant choices, spacing, soil types, blossom times, water and light requirements are some of the more complicated ones. Many people obtain the services of a good landscape architect to handle all of the details. Doing the design and work yourself only requires time, thought, good information, and planning. The first step is to make a scale drawing of your property. The illustration on the left is an example of a "before" yard. Notice that there are very few places for animals to hide or nest. The drawing on the right shows what might be done to make this yard more useful for wildlife.



**Diversity** - Different birds and mammals have their own food, shelter, and nesting requirements. The greater the variety of trees and shrubs the more types of wildlife will use your property.

**Low, Dense Cover** - Plants that provide dense cover from the ground up are extremely valuable. Unpruned evergreen trees and shrubs and the thicker deciduous shrubs are good examples. These plants provide places to escape predators, ground leaf litter for foraging, and protection from cold winds, rain, and snow.

**Open Spaces** - Leaving places that are open make the yard both attractive and gives the wildlife space in which to feed, loaf, play, and court. You also want to be able to see the behavior and interactions of the animals. Place the openings near windows or by sitting areas like patios. Feeding and nesting structures are usually put in open areas where they can be seen.

Fruit and Seed - Certain species of wildlife depend on the fruits and seeds of trees and shrubs. Keep this in mind when deciding on the plants to either add to or remove from your yard.

Plant Spacing - Your nurseryman will give you the best advice about tree and shrub spacing. In general, it is best to allow for near maximum spread at maturity to achieve the best form and shape. Overcrowding can have an unhealthy effect on plants as they must then compete with one another for light, soil nutrients, and water. This can stunt or weaken the plant and make it prone to disease.

Following is a list of plants that grow well in eastern Washington neighborhoods. Not all on the list are native and cannot be grown in dryland agricultural areas. Each of them have qualities that make them valuable for wildlife. Most of the plants were picked because of their desirability as food for birds and small mammals. Some, like the large nut trees, were chosen to supply the need that squirrels have for large nut meats. Others were chosen because they provide cover and nesting sites. Try to include plants from all of the height groups. The size of your yard will determine how many plants you will be able to grow. When the time comes to actually do the planting consult your local nurseryman or county extension agent for specific instructions.



#### SMALL SHRUBS AND GROUND COVERS

<u>Common Name</u>	<u>Latin Name</u>	<u>Ht.</u>	<u>Remarks</u>
Barberry	<u>Berberis spp.</u>	3-5'	Winter berries, dense and thorny. A real traffic controller.
Bearberry cotoneaster	<u>Cotoneaster dammeri</u>	18"	Red berries. Not winter hardy enough for some north-eastern Washington cities.
Boston ivy	<u>Parthenocissus tricuspidata</u>		Deciduous vine with bluish black berries in September and October. Will get 30 to 50' long in either full sun or full shade.
Bunchberry	<u>Cornus canadensis</u>	12"	Native species of ground cover. Deciduous and spreading.
Kinnikinnick	<u>Arctostaphylos uva-ursa</u>	18"	Good ground cover for steep hillsides. Small, pink, bell shaped flowers.

# SMALL SHRUBS AND GROUND COVERS (CONTINUED)

Korean spice viburnum	<u>Viburnum carlesi</u>	3-5'	Loose, open shrub. Fragrant white flowers in clusters. Early bloomer.
Oregon grape	<u>Mahonia aquifolium</u>	3-5'	Edible blue-black fruit. Yellow flowers in spring. Great for foundation plantings.
Red osier dogwood	<u>Cornus stolonifera</u>	10'	Plant near or at the waters' edge of creek or pond. Native plant with red stems.
Snowberry	<u>Symphoricarpos ulbus</u>	3'	White berries which are used by a wide variety of birds and persist well into the winter.
Trumpet honeysuckle	<u>Lonicera ciliosa</u>	12"	Ground cover or climbing vine. Has tubular red flowers in clusters.
Twinflower	<u>Linnaea borealis</u>	12"	Spreading evergreen ground cover. Pink "twin" flowers in June and July.
Western clematis	<u>Clematis ligisticifolia</u>	-	Native vine with white, fuzzy flowers. Berries valuable as food. Will climb nearby fences, trees, or shrubs up to 30'. Is valuable for dense cover.
Wild rose	<u>Rosa spp.</u>	3-8'	Dense deciduous low cover with rose hips lasting into the winter.



## LARGE SHRUBS

<u>Common Name</u>	<u>Latin Name</u>	<u>Ht.</u>	<u>Remarks</u>
Buffaloberry	<u>Shepardia argentea</u>	4-6'	A nitrogen fixing thorny shrub. Beautiful silvery foliage. Fruit is red and currant size.
Chokecherry	<u>Prunus virginiana</u>	12'	Abundant native shrub in the wild. Important food species.
Elderberry	<u>Sambucus spp.</u>	6-15'	Native species. Both red and blue varieties. Abundant seed production.
Firethorn	<u>Pyracantha coccinia</u> <u>'Lalandi'</u>	5-8'	Rounded bush. Scarlet red berries. Thorned. Only 'Lalandi' is hardy enough for the Spokane area.
Lemonade sumac	<u>Rhus trilobata</u>	8-15'	Fast growing and spreading. Good base density. Red fall color. Oak-like leaves.
Nanking cherry	<u>Prunus tomentosa</u>	8-10'	Pink flowers in the spring. Sweet red cherries in June or July. Hardy, attractive.
Red chokeberry	<u>Aronia arbutifolia</u>	5-8'	Fruit produced in large numbers. Openly branched. Red autumn foliage and fruit.
Red-flowered currant	<u>Ribes sanguineum</u>	6-15'	Excellent native plant for landscaping with attractive spring flowers.
Red leaf barberry	<u>Berberis thunbergii</u> <u>'Atropurpurea'</u>	5-8'	Leaves reddish purple in sun, green in shade. Has thorns and red fruit.
Russian pea-shrub	<u>Caragana arborescens</u>	10-15'	Fast growing, hardy, and multistemmed. Yellow flowers that attract hummingbirds and butterflies. Seeds shoot from the pods. Provides winter and early spring food.
Sargent crabapple	<u>Malus sargentii</u>	5-8'	Dense, broad, small tree. Slow growth. Profuse white flowers in mid-May. Tiny red fruit.

### LARGE SHRUBS (CONTINUED)

Siberian dogwood	<u>Cornus alba 'Sibirica'</u>	5-8'	Coral red branches in winter. White to slightly blue berries. Cut back in spring.
Viburnum	<u>Viburnum spp.</u>	5-8'	Showy, fragrant flowers. Good fruit production.

### SMALL TO MEDIUM SIZED TREES

<u>Common Name</u>	<u>Latin Name</u>	<u>Ht.</u>	<u>Remarks</u>
American arborvitae	<u>Thuja occidentalis</u>	30-50'	Upright, open habit. Scale-like leaves. Symmetrical shape. Berries attract birds.
Blackthorn cherry	<u>Prunus spinosa</u>	10-20'	Fruits are abundant and last into the winter.
Cornelian cherry	<u>Cornus mas</u>	10-30'	Multi-stemmed. Yellow flowers in early spring. Scarlet berries ripen in July or August.
Crabapple	<u>Malus spp.</u>	10-30'	Flower profusely in white, pink, or red. Small fruit is edible, red to yellow or green.
English hawthorn	<u>Crataegus oxyacantha</u>	10-30'	Shrubby, low branching, round-topped. White flowers in May. Scarlet fruit in September.
Fruit trees	<u>Malus spp.</u>	20-40'	Fruit trees of all types attract wildlife. Standard size are the best.
Littleleaf linden	<u>Tilia cordata</u>	25-50'	Needs plenty of water. Pyramidal form. Fragrant flowers. Small, thin-shelled fruits.
Maheleb cherry	<u>Prunus maheleb</u>	15-50'	Abundant cherries. Very hardy.
Oriental cherry	<u>Prunus serrulata</u>	10-30'	Small pyramidal tree. Wind resistant. White flowers in late April. Scarlet fall color.

SMALL TO MEDIUM SIZED TREES (CONTINUED)

Rocky mountain juniper	<u>Juniperus scopulorum</u>	15-40'	Drought tolerant. Important tree for thermal cover in the winter.
Russian olive	<u>Elaeagnus angustifolia</u>	15-20'	Drought resistant. Nitrogen producing. Attractive grayish silver leaves. Small olives.
Serviceberry	<u>Amelanchier alnifolia</u>	10-15'	Native tree/shrub. Is an important deer browse species in the wild. Showy blossoms late spring with black berries used by many birds.



LARGE TREES

Common Name	Latin Name	Ht.	Remarks
Black walnut	<u>Juglans nigra</u>	80-120'	Deep tap root. Drought and cold hardy. Nuts extremely edible by both man and squirrel.
Butternut	<u>Juglans cinerea</u>	80-100'	Probably the hardiest of the walnuts. Nuts used by squirrels and man.
Colorado blue spruce	<u>Picea pungens</u> 'Glauca'	80+'	Very stiff, regular, horizontal branches forming broad pyramid. Blue/gray color.
Douglas fir	<u>Pseudotsuga menziesii</u>	100+'	Pyramidal habit. Ends of branches tilt up. Soft dark green to blue/green needles.
Engelmann spruce	<u>Picea engelmannii</u>	90-120'	Best in deep, rich, moist, loamy soils. Native species. Shade tolerant.
European beech	<u>Fagus sylvatica</u>	60-100'	Broad, cone shaped. Smooth gray bark. Glossy green leaves. Seeds attract birds.



Grand fir	<u>Abies grandis</u>	100-150'	Prefers deep, moist soil. Shade tolerant. Inland trees are smaller. A true fir.
Honey locust	<u>Gleditsia triacanthos</u> <u>'inermis'</u>	60-80'	Delicate, compound leaves. Does well in inner city plantings.
Mountain ash	<u>Sorbus spp.</u>	20-30'	Bears clusters of orange/red fruits into the winter. Fruits attract Bohemian waxwings.
Northern pecan	<u>Carya illinoensis</u>	60-80'	Large and long lived. Nuts are smaller than commercial varieties.
Pin oak	<u>Quercus palustris</u>	70-80'	Pyramidal shape. Good shade tree with acorns for squirrels.
Ponderosa pine	<u>Pinus ponderosa</u>	100-150'	Native species. Loosely arranged branches. Plated bark.
Red oak	<u>Quercus rubra</u>	70-90'	Broad, spreading branches and round-topped crown. Fast growth. Needs fertile soil and plenty of water. Reasonably open shade and deep roots make it possible to garden under.
Sentry sugar maple	<u>Acer saccharum</u> <u>'Monumentale'</u>	50-60'	Demands regular water. Narrow growing habit. Spectacular fall color. Fruits are eaten by squirrels.
Silver maple	<u>Acer saccharinum</u>	50-70'	Large maple. Seeds used by squirrels. Do not plant by a street or sidewalk.
Western paper birch	<u>Betula papyrifera</u>	50-60'	Native species. Fruit is cylindrical cone.
Western red cedar	<u>Thuja plicata</u>	90-150'	Smaller in eastern Washington. Prefers moist ground. Native species. Shade tolerant.
White fir	<u>Abies concolor</u>	50-90'	Very symmetrical. Bluish-green. Slow growth when young. Can survive in very poor soils.
White oak	<u>Quercus alba</u>	70-100'	Needs lots of space, some irrigation in the summer. Important for gray squirrels.

### FLOWERING ANNUALS AND PERENNIALS

<u>Common Name</u>	<u>Latin Name</u>	<u>Remarks</u>
Bee plant	<u>Cleome spinosa</u>	A real multi-purpose annual; produces both nectar for bees and hummingbirds, and seeds for songbirds.
Catnip	<u>Nepeta cataria</u>	Hardy, spreading member of the mint family. Seeds of all the mints are readily consumed by finches, goldfinches.
Cosmos	<u>Cosmos spp.</u>	Annual bedding plant. Nectar used by bees and butterflies, seeds by wintering goldfinches and finches.
Fireweed	<u>Epilobium angustifolium</u>	Native perennial species, growing up to 5'. Spreads by rhizomes. Seeds eaten by finches, goldfinches.
Globe thistle	<u>Echinops ritro</u>	Perennial. Excellent producer of seed for wintering songbirds.
Marigolds	<u>Tagetes spp.</u>	Favorite annual bedding plant. Abundant seeds last into late winter.
Sunflower	<u>Helianthus spp.</u>	Common garden annual, or native perennial species available. <u>The</u> preferred seed of wintering songbirds.
Zinnia	<u>Zinnia spp.</u>	Annual bedding plant. Seeds readily consumed by songbirds, including goldfinches, finches.

# MAMMALS, AMPHIBIANS, AND REPTILES

Washington Department of Wildlife



Serving Washington's  
wildlife and people-  
now and in the  
future.

Not all of these animals are often seen by city residents. They must be looked for. Not all will appear in your backyard, but some might. With diligence and interest all of them may be seen within the city limits. These animals have been included as part of a checklist not because you might attract them to your backyard, but because they are a part of the larger ecological picture.

## COMMON NAME

## NATURAL HISTORY NOTES

### MAMMALS

#### CHIROPTERA

Big Brown Bat and Big Myotis (bat)	Most often seen near the water at night. Sometimes seen in residential areas at night and feeding on flying insects. Contrary to popular belief they do not aim for women's hair.
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#### CARNIVORES

Coyote	Will occasionally move into an urban area because of the abundance of loose cats and small dogs.
Raccoon	Experienced most often near areas that have a water source nearby. These animals should not be fed. Can be a problem if domestic cats or dogs are fed outside.
Striped Skunk	Will be seen mostly in fall and spring. Will nest under sheds, porches, or lumber piles.

#### RODENTS

Beaver	America's largest rodent was nearly extinct in the mid-1800's. It is extinct in most of its old world range. Conservationists have brought the beaver back, in some areas, so that they are again a common animal. Evidence of their activity may be found along streams and rivers. They cut trees like willow, eat the growing cambium, and build homes and dams from them.
Columbian Ground Squirrel	Live mostly in the ground and in burrows. Seen mostly during the spring and early summer months during daylight hours. They offer a startling chirp for conversation and a hurried chatter when alarmed.
Gray Squirrel	Found only in or near cities with a park system that has planted nut trees. These fairly large squirrels are native to the mid-western and eastern portion of this country and were brought to this state in the early 1900's.
Meadow Vole	Those living near open fields see this rather robust, short-tailed mouse. It is the most common native mouse on the east side of the Cascade mountains.

## RODENTS (CONTINUED)

- Porcupine Sometimes called "Quill-pig," this large, slow moving rodent is seen on occasion in residential areas. They eat the new bark of trees and are most active at night.
- Red Squirrel A small tree squirrel with a flat, bushy tail. Anyone who has ever walked in the woods has been scolded by this bold creature.
- Yellow-bellied  
Marmot A rather large bulky rodent found living in rock piles or burrows in the ground. They have become common in some urban areas. Often called a rockchuck.

## LAGOMORPHA

- Cottontail Found on the outskirts of town in dense shrubbery, brush piles, and debris. It is small to medium sized and is probably the most recognized of all rabbits.

## REPTILES

- Common Garter Snake This snake is medium in size with brightly colored stripes running lengthwise. It is normally found in heavy underbrush and grasses fairly close to water. It feeds on insects and small mammals.
- Western Terrestrial  
Garter Snake A fairly common snake found in a variety of habitats. It is fairly large, usually gray/brown with darker blotches between faint stripes.
- Western Pond Turtle A rare turtle on the Washington threatened species list. It has a uniformly gray/brown underside and dark top.
- Painted Turtle The most common turtle in North America. It has the familiar red/yellow/black markings on its underside and yellow stripes on its head.

## AMPHIBIANS

- Long-toed Salamander Dirty white underside with brown/black upperside and light colored back stripe.
- Tiger Salamander Yellow/gray below, blotched yellow and black above.
- Roughskin Newt Yellow/orange below, uniformly brown above, with rough skin.
- Western Toad Warty, brown/green above, light back stripe.
- Pacific Treefrog Has toe pads. May be green, brown, tan, or gray. Black band on nose, eye, and shoulder. Is especially musical at night with a highly pitched "skreeeee."
- Northern Leopard Frog Whitish below, greenish brown above with light bordered dark spots and prominent back ridges.
- Bullfrog Large, pale yellow below, green/olive above, greenish head. The base viol of the night.
- Spotted Frog Reddish below, brownish above with dark blotching, eyes pointed upwards.

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# WINTER FEEDING OF WILD BIRDS

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Washington Department of Wildlife



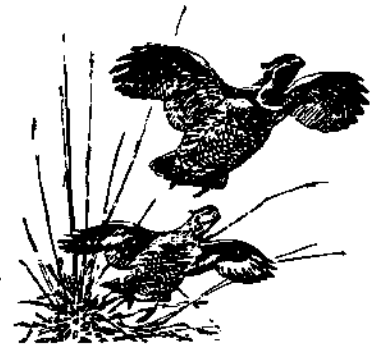
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future.

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Feeding birds in the winter months is a favorite cold weather pastime for many people and gives urban residents an opportunity to observe wildlife closeup. Winter feeding also provides a dietary boost at a time that can be stressful for both song and upland game birds. The extra nutrition can help the animals become more able to withstand periods of extreme cold and put them in better condition for the spring breeding season. There are a variety of songbirds that you might expect to visit your feeders. Among these are sparrows, juncos, chickadees, grosbeaks, and finches. In some portions of the city, valley quail, hungarian partridge, and ring-necked pheasants may be observed. In this packet I have included a list of birds that are likely to be seen in urban areas of eastern Washington. To gain full enjoyment of the birds that visit your yard, I suggest purchasing one of the popular identification guides for sale at local bookstores.

## Upland Game Birds

Pheasants, quail and partridge are unique in that they have a large body size to maintain and keep warm in the winter months. Cereal grains are the only seeds that will provide enough carbohydrates for their high energy requirements. Their favorites are cracked corn and wheat. Barley will be eaten, but only if nothing else is available. Either scatter small amounts of grain on the ground daily or provide some sort of hopper. As with the other birds, feeding should be done within a short distance of dense shrubbery for protection from predators. Don't worry about snow covering up the grain. These birds naturally scratch for food and can dig through as much as a foot of snow.



Birds don't have teeth with which to chew. Seeds are very hard and require grinding to prepare them for digestion. Even insects and soft fruits require some grinding to help break them down. Small particles of sand or gravel act as miniature millstones in the bird's gizzard which churn and mash the food. Course sand, crushed oyster shells, poultry granite grit, and broken eggshells are excellent and can be scattered with the grain or placed near the feeder. The shells also provide calcium which is a much needed mineral, especially during the breeding season when calcium reserves are needed for egg laying.

## Seed Eating Birds

Some birds have seeds as the main ingredient in their diet throughout the year. These birds include the house finch, American goldfinch, and some sparrows. Some eat insects in the summer and add seeds to their diet in the winter. These birds include the chickadee, nuthatch, grosbeak, and siskin.

Different birds prefer different seeds. Large seeds, like sunflower, are eaten by birds like the goldfinches, chickadees, grosbeaks, house and purple finches. Smaller seeds such as millet, milo, wheat, canary seed, or rice are eaten by birds like juncos, house sparrows, and song sparrows. It is difficult

to provide one kind of seed or one seed mixture that will satisfy the many birds that may visit the backyard. However, some seeds seem to be preferred by a greater number of birds. These preferences are ranked in the table on the last page of this fact sheet.

Some commonly sold mixtures are mostly small seeds with some sunflower seeds included. When offered a seed mixture the birds will often search for their favorite seeds and scatter the rest. Unless other birds then come to eat the seeds that have been scattered, the result is waste, higher feeding costs, and a mess on the ground that could attract mice and rats. A variety of seeds of single types should be put in individual feeders, allowing the birds to select their preferred types.

Seeds can be placed in a variety of containers and placed in different parts of the backyard. Towhees, juncos, and sparrows prefer to look for a meal on the ground, so scatter seeds for them amid grass and leaves. Avoid large concentrations of seeds in any one spot. Provide only amounts that will be eaten in one day to avoid problems with mice.

Feeders are of two basic types: selective and nonselective. Selective feeders are smaller, hang freely from a tree branch, and have short perching areas. These allow small, agile birds to use the feeder but discourage starlings, house sparrows, blackbirds, and crows. Nonselective feeders are larger, have larger perching areas, and are usually firmly attached to a pole, tree stump, or other immovable object. Nonselective feeders invite all of the birds in, regardless of their size and dexterity. A number of different kinds of feeders are available in retail stores and bird supply catalogs. When making your selection, keep in mind the kind of bird you want to attract, its dietary preferences, where it likes to feed, and its body size and agility. For those who like to work with wood, there are a number of ideas and plans contained in the references listed in the reference section of this packet. Some of the more common types of feeders include the following:



#### Bird Table

Any flat, elevated surface several square feet in size can serve as a bird table. A rim around the edge will help prevent the food from blowing away. A roof may add to the appearance of the table and provide protection from rain and snow. Anything can be served on a table like this: bread crumbs, seeds, suet, fruits, and table scraps. Because the table is large, it is accessible to any type of bird.

#### Window Shelf

Mount a bird table on the side of the house and under a window and you have a window shelf feeder. Again, this is a nonselective feeder, but it will bring a lot of birds up close. Replenishing feeders that are near windows is much easier, especially in poor weather conditions.

#### Box/Hopper Feeder

Box or hopper feeders are generally nonselective, especially the larger, pole-mounted varieties. The feeder may be six inches square or larger with a sloping roof, one or more glass or clear plastic sides, and a shelf or perch running along the edge where the seeds are exposed. The box feeder is usually hung from a tree branch or mounted on a rigid pole.

Another interesting design is a box feeder that is mounted on a pulley strung between a tree and a window. This allows the feeder to be "reeled in" for refills. By moving it closer to the house each day, more wary birds may be enticed to use other feeders mounted near the window. Another variety of box feeder is swivel-mounted on a pole, allowing the feeder to turn. Large weather vanes point the opening of the feeder away from the wind to keep the seed dry.

#### Tube Feeder

Tube feeders have recently gained in popularity because they are very selective in what is allowed access to the seeds. Tube feeders are usually made of clear plastic rolled into a cylinder with two or more openings equipped with perches. Larger ones hold enough seed to last for several days. The clear plastic makes it easy to see when the feeder needs refilling. Squabbling is kept to a minimum because only a limited number of birds can use the perches at a time. This design insures that seeds are extracted one at a time, so there is less waste. This may be important when using expensive seeds like sunflower and niger.



#### Insect Eating Birds

Many of Washington's birds eat insects. Some of the smallest, most colorful, and most pleasant sounding birds have insects as the main ingredient in their diet. Unfortunately, it is this group of birds that is most seriously affected by the development of their native habitat by man. Insects find refuge in the crevices of bark, on twigs, amid leaves and needles, and in the ground litter under plants. They lay their eggs on and undergo larval metamorphosis on plants. Having a diversity and abundance of trees, shrubs, and flowers on your property indirectly provides food for insect eating birds.

During the winter months, many of these birds change their diet to include seeds and fruits to compensate for a dwindling supply of insects. Suet may be substituted for the high calorie insects. Suet is the hard fat that surrounds the kidneys in cattle and sheep and can be bought at a grocery store or meat market. If it is not available, ordinary beef fat trimmings will suffice. Beef fat can be melted, poured into cupcake molds, and stored in the freezer until ready for use. Ordinary fat melts at a lower temperature than suet and can be a serious problem if birds get it on their feathers. The feathers' insulating qualities are destroyed and the bird may lose body heat too rapidly to survive. Only provide beef fat when it is well below freezing outside. This will ensure that it will remain solid and not become rancid.

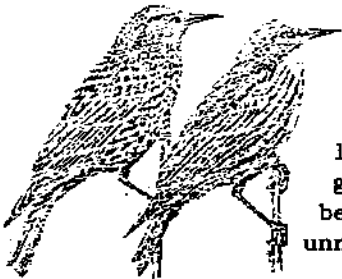
Suet or fat can be offered to the birds in several ways. Suet or fat chunks may be put in a nylon mesh bag, or in a wire mesh container and suspended from a tree branch. Suet can be softened by heating and then pressed between the scales of a pine cone or into holes that have been drilled in a small log which is then hung from a tree branch. Suspending the suet from a swinging container makes it more difficult for starlings to reach. Suet is often given to the larger woodpeckers in a mesh container that is fastened to the underside of a large branch or leaning tree trunk.

## FRUIT EATING BIRDS

Some birds, notably the Bohemian and cedar waxwings, eat fruits. The best way to provide for these birds is to plant a variety of fruit bearing trees and shrubs in your yard. A list of tree and shrub species that are easily grown in eastern Washington is provided in this packet.

Sweet, juicy, fleshy fruits of plants like blackberry, huckleberry, cherry, dogwood, serviceberry, mulberry, and elderberry are the most nutritious and will be preferred. These soft fruits are either eaten quickly or mold, so they are gone by early winter. The drier, less sweet fruit of plants like juniper, sumac, mountain ash, holly, snowberry, cotoneaster, and pyracantha will not be consumed immediately, but will be around during the winter and early spring months when food is in short supply. A well-balanced landscape should include both kinds of fruit producing plants.

## FEEDING PROBLEMS AND HOW TO SOLVE THEM



Nothing in life is trouble free. Feeding birds in the backyard may seem like a tranquil activity, and often is. Animals, however, are aggressive creatures. Wild ones have a heightened sense of survival that most humans and domesticated animals have lost through the years. Some things that the animals do may seem greedy and sometimes cruel. A degree of competition and aggressive behavior is natural and desired, but, some animals have become unnaturally numerous and need controlling.

## STARLINGS

Starlings may descend in a shrieking hoard on a backyard feeder. Their large size and aggressive behavior will drive away other birds, especially flickers and woodpeckers. However, their size and behavior offer ways with which to discourage them.

Starlings can be kept from seeds by using feeders with small perches and small openings. A tube feeder suspended from a string or wire is especially effective. Starlings are not fond of unhulled sunflower seeds, peanuts in the shell, or hard suet. Avoid table scraps, baked products, peanut hearts, large amounts of birdseed, and other foods in large quantities, especially when placed on bird trays or on the ground.

Starlings do not like to cling upside down, so suet may be placed in the center of a covered, hanging mesh feeder. This will make access difficult for them but will pose no problem for the chickadees, nuthatches, creepers, and woodpeckers.

Some manufacturers make a feeding tray that has a counterbalanced perch. When large birds land on the perch, their weight causes a partition to come between them and the seed supply. Smaller birds are not heavy enough to move the counterbalance. This might be worth a try if starlings are especially troublesome.



## HOUSE SPARROWS

House sparrows like to feed on the ground or from a solid perch. Use small, hanging feeders that swing or twirl whenever a bird lands on the perch. Avoid bakery products, large amounts of seed, cracked corn, wheat, and oats. Reducing the amount of seed that is scattered on the ground may discourage towhees, juncos, and white and golden-crowned sparrows. So you must find the right amount to benefit desirable species or learn to accept the presence of some house sparrows for the sake of the other birds.

## PIGEONS

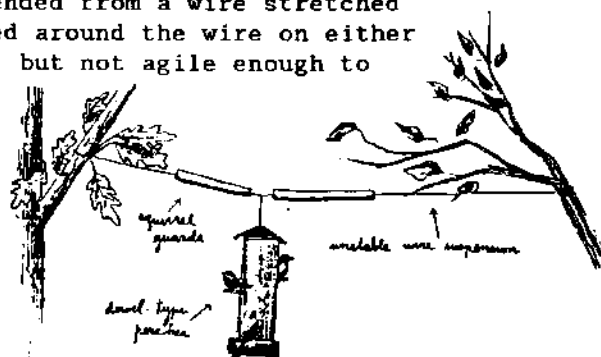
Pigeons (or Rock Doves) are usually found only in neighborhoods where the architectural style of the houses includes overhanging eaves and covered ledges. These protected spaces are used for shelter and nesting. Since pigeons eat from off the ground, use small quantities of seed in feeders that either hang or are on poles.

## SQUIRRELS

The antics of squirrels are a delight to watch, especially as they sit on their haunches nibbling furiously on a walnut that has been provided for them. Small, furry creatures can usually find a soft spot in anyone's heart. This love may be lost when a squirrel invades a bird feeder and devours all of the expensive sunflower seeds that have been provided for songbirds. Homeowners who have had squirrels invade the attic can attest to their destructive powers, especially when electrical wires are laid bare of insulation from the squirrel's gnawing habits.

If you choose to discourage squirrels from some of your feeders, you must take advantage of their large size and inability to fly. Feeders mounted on a pole can be protected by attaching a cone of sheet metal on the pole under the feeder. This will prevent squirrels from getting to the feed from underneath. However, squirrels are world-class high jumpers, so the feeder and squirrel guard must be placed at least 5 feet off the ground and at least 8 feet from the nearest tree, building, or branch.

Hanging feeders should be suspended by wire if squirrels are around, because they can quickly gnaw through rope or string to bring the food source down to ground level. Squirrels can drop or slide down a wire an amazing distance to land on a suspended feeder. To discourage this, a series of smooth metal discs can be placed along the supporting wire and held in place by short sections of garden hose or plastic tubing. These discs will tip to dump off any hungry squirrel. Hanging feeders can also be suspended from a wire stretched between two trees, with plastic tubing placed around the wire on either side of the feeder. Squirrels may be agile, but not agile enough to hold onto a tube that is rotating freely around a thin wire.



## RATS AND MICE

These rodents may be attracted to seed that is left on the ground or on accessible bird trays. Rats and mice are most active at night, so provide only as much seed to ground-feeding and tray-feeding birds as can be consumed in one day's time.



## HAWKS

Large concentrations of birds around a feeder may attract a hawk or two, especially during the winter. During the lean months these birds of prey will sometimes venture into urban habitats in search of a meal, for they too feel the sting of winter. An occasional foray of a sharp-shinned or Cooper's hawk into your backyard should be treated as a welcome event rather than as a problem. Predation is a natural part of a well-functioning ecosystem and an important component of all of Washington habitats. Healthy songbirds can usually protect themselves from predators by taking to cover quickly. Trees and shrubs that have been planted by a homeowner provide a place for the birds to escape.

## CATS

Keep cats in mind whenever feeders are established. Most birds like to have some type of tree or shrub nearby into which they can escape if predators are threatening. Shrubs, however, also provide hiding places for cats. Placing food too close to these hiding places may lure birds to within their reach. Leave several feet between any food source and dense vegetation so that at least one pair of eyes in a group of feeding birds will have a good chance to spot a lurking cat and give warning to the rest of the flock. Attach a small bell to your cat's collar to notify the birds of its presence.



RELATIVE ATTRACTIVENESS  
OF SEEDS TO BIRDS

Seed Type	Attractiveness	Comments
White Proso Millet	high	Most preferred seed among birds that eat small seeds, especially sparrows and juncos.
Oil-type Sunflower	high	Best of the sunflower seeds. Chickadees, grosbeaks, and finches generally prefer sunflower seeds to white millet.
Red Proso Millet	high	Similar in value to white proso millet.
Peanut Kernels	high	Despite their size, shelled peanuts are eaten by many birds.
German Millet	moderate	Not as good as white proso millet and is preferred by house sparrows and brown-headed cowbirds.
Black-striped Sunflower	moderate	Not as good as the smaller oil-type sunflower, but readily eaten by chickadees, finches, and grosbeaks who prefer any kind of sunflower.
Canary Seed	moderate	Often eaten by the same birds that eat white proso millet, but canary seed is more expensive.
Hulled Sunflower Pieces	moderate	Especially attractive to finches; useful if messy accumulations of husks is a problem.
Wheat	moderate	Black-striped sunflower and white proso millet are preferred by birds that eat wheat.
Milo	moderate	Not as attractive as white proso millet. A common ingredient in commercial seed mixes.
Gray-striped Sunflower	low	Not as attractive as other types of sunflower seeds.
Thistle (niger)	low	Highly valued by goldfinches and siskins, and eaten by house finches, purple finches, song sparrows, and juncos. Expensive!
Buckwheat	low	Other seeds are much more attractive to most birds.
Rice	low	Other seeds are much more attractive to most birds.
Peanut Hearts	low	Extremely attractive to starlings, so these should be avoided.
Hulled Oats	low	Also called oat groats. Only starlings find them attractive.
Flax	low	Almost totally worthless.
Rape Seed	low	Totally worthless.

Important Note: This table is the result of a study conducted in Maryland.

For those who like to provide something special for insect-eating birds, here are some recipes to try:

1. Basic Formula

Heat to boiling 1 part suet and 6 parts water.  
Add 2 parts cornmeal, 1/2 part flour, 1 part brown sugar.  
Cool. Pour into cupcake molds and allow to harden.  
Serve in feeder.

2. Standard Mix

Twice melt 2 parts suet.  
Blend in 1 part yellow cornmeal and 1 part peanut butter.  
Allow to thicken. Pour into molds and allow to harden.  
Serve in feeder.

3. Suet Mix

Mix 1 1/2 parts ground wheat bread, 1 part hulled sunflower seeds, 1/2 part millet, 1/2 part dried and chopped fruit, 1 1/2 parts dried, ground meat. Melt 9 parts suet.  
Blend dry ingredients into suet as it cools and begins to thicken.  
Serve in feeder.

4. Hard Peanut Butter Mix

Twice melt 2 parts suet.  
Thoroughly blend in 1 part peanut butter.  
Blend in 2 parts yellow cornmeal and 2 parts fine cracked corn.  
Pour into cupcake molds or other form.  
Cool and serve in feeder.

5. Soft Peanut Butter Mix

Melt 1 part suet.  
Stir in 1 part peanut butter.  
In another bowl mix 3 parts yellow cornmeal and 1/2 part whole wheat flour.  
When suet/peanut butter mixture starts to thicken, blend in dry ingredients. Serve in feeder.

6. Von Berlepsch Formula (National Audubon Society)

Mix well the following:

- bread, dried and ground	5 parts
- meat, dried and ground	3 parts
- hempseed	5 parts
- millet	3 parts
- ant "eggs"	2 parts
- sunflower seed	3 parts
- dried berries	1.5 parts

Add 1 1/2 times as much suet that has been twice melted.  
The dried meat can be increased to 5 parts in place of the eggs.  
Meal worms may also be tried in the mixture.

Caution: Feeding straight peanut butter may cause intestinal problems in the birds.